

1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DEHYDRATION AND DESALTING OF PETROLEUM EMULSIONS -U-
AUTHOR--(05)-BULSHEV, S.F., BASHENOV, YU.M., KRYLOV, O.A., BASHMAKOV, P.V.,
DONCHENKO, N.A.
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PROCESSING DATE--13NOV70

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PETROLEUM EMULSIONS ARE DESALTED
AND DEHYDRATED, REDUCING CORROSION OF PETROLEUM EQUIPMENT, BY
INTRODUCING POLYETHYLENIMINE AS A SURFACTANT.

UNCLASSIFIED

AA0046401

UR 0482

Soviet Inventions Illustrated, Section II Electrical. Derwent, 1/10

242504 VOLTAGE GENERATOR is useful in radio-electronic equipment for identification of targets, and for solving problems of determining the probability coefficients of accidental characteristics in data storage and identification systems. The proposed generator contains a non-linear element such as a varicond connected to the voltage through a condenser and the outlet busbar is connected to the common point of the varicond and load.

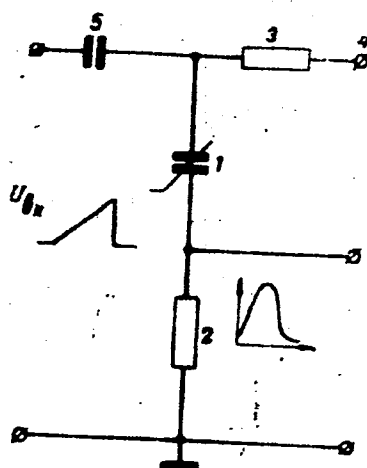
The non-linear varicond 1 is connected in series to the impedance of load 2. Through the resistor 3 a displacing voltage is led from source 4, while entry of the circuit is blocked by a direct current transformer.

11.12.67 as 1202999/18-24.B.YU.BYLYBENKO & F.I. ANDRUSHCHENKO (5.9.69) Bul 15/25.4.69. Class 42m⁴. Int.Cl.G 06g.

AUTHORS: Bulybenko, V. Yu.; Andrushchenko, F. I.

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19781594

AA0046401



J.C.

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19781595

USSR

UDC 669.017:669.018:559.570

BUYNOV, N.N., KARAKHANYAN, R.A., ROMANOVA, R.R., BULYCHEV, D.K., and RODIONOV, K.P., Institute of Metal Physics, Academy of Sciences USSR

"Distribution of Strain in Metals and Alloys After Hydroextrusion"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 2, Feb 71, pp 304-310

Abstract: By electron microscopy and measurements of hardness it was shown that strain distribution in different metals and alloys, deformed by hydroextrusion, is substantially different and that for each material there should exist an optimum magnitude of friction on the surface of contact between the die and sample which provides a uniform distribution of strain along the transverse cross section of a hydroextruded part. The dislocation structure of tungsten and VM1 molybdenum, deformed to different degrees by a two-stage hydroextrusion process, was studied. Increase in the strain rate for tungsten and use of double extrusion for VM1 molybdenum provides produces a cellular structure with exceptionally small cells (down to 0.3 microns. This is particularly true when a very high rate of deformation is applied (100,000 mm/sec). 4 figures, 1 table, 14 bibliographical references.

1/1

1/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THE PLASTICITY AND STRENGTH OF SOLID BODIES AT HIGH PRESSURES -U- 7

AUTHOR--(05)-BERESNEV, B.I., MARTYNOV, YE.D., RODIONOV, K.P., BULYCHEV,
D.K., RYABIBIN, YU.N.
COUNTRY OF INFO--USSR

SOURCE--THE PLASTICITY AND STRENGTH OF SOLID BODIES AT HIGH PRESSURES
(PLASTICHNOST' I PROCHNOST' TVEROYKH TEL PRI VYSOKIKH DAVLENIYAKH)
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--PLASTIC DEFORMATION, HIGH PRESSURE EFFECT, MECHANICAL
STRENGTH, METAL MECHANICAL PROPERTY/(U)GTSK METAL

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PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AM0130571

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. TABLE OF CONTENTS: PREFACE 5. INTRODUCTION 9. CHAPTER I. THE EQUIPMENT FOR THE REALIZATION OF PLASTIC DEFORMATION OF SOLID BODIES AT HIGH PRESSURES 11. II. PLASTICITY, STRENGTH AND DESTRUCTION OF SOLID BODIES AT HIGH PRESSURE 39. III. THE INFLUENCE OF DEFORMATION UNDER HIGH PRESSURE ON THE PROPERTIES OF PLASTIC GTSK (?) METALS 99. LITERATURE 158. THE MONOGRAPH DEALS WITH QUESTIONS CONNECTED WITH THE DEVELOPMENT OF EQUIPMENT FOR THE CREATION OF PRESSURE IN LIQUID UP TO 25,000 KG-CM PRIME2 AS WELL AS FOR THE REALIZATION UNDER THESE CONDITIONS OF PLASTIC DEFORMATION. DESCRIBED IS THE INFLUENCE OF PRELIMINARY DEFORMATION UNDER PRESSURE ON THE CHANGE IN MECHANICAL PROPERTIES FOR VARIOUS METALS. THE BOOK IS DESIGNED FOR SPECIALISTS IN THE PHYSICS OF SOLID BODIES AND METALLURGISTS.

UNCLASSIFIED

USSR

UDC: 624.072.32

KLIMOV, V. I., ~~BULYCHEV, L. A.~~

"Thin-Walled Curvilinear Rods of Variable Cross Section"

Tr. Mosk. aviats. in-ta (Works of the Moscow Aviation Institute), 1971, vyp. 180, pp 109-121 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7V782)

Translation: The deformed state of thin-walled rods of variable cross section is considered. External loads are arbitrary, heating is nonstationary, moduli of elasticity of first and second kind are variable with respect to the length and the contour of the rod. The solution is given by the variational method of Lagrange with the hypotheses for a thin-walled rod. Differential equations and formulas are derived for determining the stressed and deformed state of a structural element. Authors' abstract.

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USSR

UDC 624.072.32

KLIMOV, V.I. and BULYCHEV, L.A.

"Thin-Wall Curved Beams of Variable Cross Section"

Moscow, Prochnost' i Ustoychivost' Tonkostennykh Aviatsionnykh Konstruktsiy, 1971, pp 109-121

Abstract: The article analyzes an elastic thin-wall beam of circular axis and open cross section, which varies continuously along the axis. The beam is subject to nonuniform heating and to non-uniformly distributed forces on its surface.

The solution is based on Lagrange principle of variations.

The mean line of the cross section of the beam is represented by a vector equation (1.1) using curvilinear coordinates shown on fig. 1.

The shear and moments are expressed as functions of deformations. This leads to a system of linear differential equations (3.19).
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USSR

KLIMOV, V. I. and BULYCHEV, L. A., Prochnost' i Ustoychivost' Tonkostennykh Aviatsionnykh Konstruktsiy, 1971, pp 109-121

Curvilinear beams of constant cross section, straight thin-wall beams and ring frames are particular cases of the above general solution.

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USSR

UDC 612.013.1.014.43.014.461

POKROVSKIY, V. I., BULYCHEV, V. V., LISYKOV, T. Ye., MALEYEV, V. V.,
UTEKHIN, V. A., CHERNAYEVA, T. Ye., MAYOROV, Yu. M., MILOVIDOVA, S. S., and
KAFAROV, K. A., Central Department of Infectious Pathology, Scientific Research
imeni N. N. Pirogova, Institute of Epidemiology, Ministry of Health USSR,
and chair of Hospital Therapy, Evening Faculty, Second Moscow Medical Institute,
and Chair of Hygiene, State Central Institute for Physical Culture

"Effect of Dehydration and Hyperthermia on Homeostasis in Healthy Persons"

Moscow, Sovetskaya Meditsina, No 2, 1973, pp 27-31

Abstract: Blood chemistry and cardiovascular changes were studied in 20
healthy males aged 18 to 32 before and after staying various lengths of time
in a sauna bath (15 to 30 and 35 to 55 minutes of exposure to temperatures of
80 to 100° and humidity of 8%). In those who remained in the sauna 15 to 30
minutes, hyperthermia resulted in hyperfunction of the heart, slowing of the
blood flow, elevation of the pH and pressure of venous blood, increase in
serum proteins and in the specific gravity and viscosity of blood, decrease in
clotting time, loss of chlorine and potassium. In the group that remained in
the sauna over 35 minutes, dehydration caused a loss of electrolytes (chiefly
chlorine and potassium) with urine, cardiac hypofunction, slowing of the blood
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USSR

POKROVSKIY, V. I., et al., Sovetskaya Meditsina, No 2, 1973, pp 27-31

flow, decrease in venous and arterial blood pressure, shortening of clotting time, and increase in blood proteins, specific gravity, viscosity, and pH. The biochemical changes in both groups were within physiological limits and had no lasting effects. These findings can be used to determine disruptions of homeostasis, evaluate alterations in water-salt metabolism, acid-base equilibrium, etc. in infectious patients, and assess the efficacy of therapy, particularly in gastrointestinal diseases.

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USSR

UDC 616.932-08-036.8:612.013.1

NIKIFOROV, V. N., POKROVSKIY, V. I., ~~RIDLYCHEV, V. V.~~, MALEYEV, V. V.,
KUPRIYCHUK, A. B., KUCHEROVA, T. P., BALASHEV, V. I., KOL'YAKOVA, T. A.,
and VEYUR, N. A., Scientific Research Institute of Epidemiology, Ministry
of Health USSR

"Restoration of Homeostasis in Cholera Patients Receiving Rehydration Therapy"

Moscow, Sovetskaya Meditsina, No 9, 1971, pp 114-120

Abstract: Normalization of disturbances of homeostasis in cholera patients is achieved by careful monitoring of the effects of rehydration therapy. Various indices of homeostasis -- physicochemical properties of the blood, acid-base equilibrium of arterial and venous blood, clotting, etc. -- were investigated in 58 patients with Asiatic cholera before and during rehydration with the standard No 1 solution (5 g NaCl, 4 g NaHCO₃, and 1 g KCl per liter of apyrogenic water). The disturbance of homeostasis before treatment was marked by increased specific gravity of plasma, viscosity, and hematocrit and decreased volume of circulating plasma. Changes in the acid-base equilibrium and blood gases were manifested by signs of compensated respiratory alkalosis, metabolic compensated acidosis, and stagnant hypoxemia. Disruption of the movement of blood electrolytes was accompanied by decreased concentration of potassium,
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USSR

NIKIFOROV, V. N., et al., Sovetskaya Meditsina, No 9, 1971, pp 114-120


sodium, and chlorine. Fibrinolysis, clotting, recalcification, and heparin time increased while the prothrombin index and fibrinogen increased.

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USSR

UDC 616.155.392-085.277.3-059:615.37

 SKURKOVICH, S. V., BULYCHEVA, T. I., KOVALEVA, L. G., and ISAYEV, V. G., Laboratory of Immunology and Virology of Leukoses and Hematology Clinic, Central Institute of Hematology and Blood Transfusion, Ministry of Health USSR

"Active Immunization of Acute Leukemia Patients with Live Allogeneous Leukotic Cells Combined with Antileukosis Drug Therapy"

Moscow, Problemy Gematologii i Perelivaniya Krovi, No 5, 1970, pp 32-35

Abstract: A group of nine patients with acute leukemia received intravenous and intramuscular injections of leukotic cells from other such patients, after which they were treated with various drugs (prednisolone, 6-mercaptopurine, methotrexate, vincristine). The response was almost immediate - lowering of body temperature, improvement of sleep and appetite, shrinkage of lymph nodes and parenchymatous organs, cessation of hemorrhages, etc. Five of the nine had remissions lasting an average of 9.1 months and a lengthening of the life span by 18 months. On the other hand, in a group of control patients (treated with drugs alone), the remissions lasted only five months on the average and the life span was extended by just 6-7 months.

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Ion Exchange

UDC 541.183

USSR

BULYCHEYEVA, M. S., NYS, P. S., and SAVITSKAYA, Ye. M., All-Union Scientific-Research Institute of Antibiotics, Moscow

"A Method of Computing the Sorption of an Ampholyte With Allowance for a Nonexchange Electrolyte"

Moscow, Zhurnal Fizicheskoy Khimii, Vol XLIV, No 12, Dec 70, pp 3099-3101

Abstract: The authors determined the quantitative sorption of an ampholyte by nonexchange SE-50, as it takes place by several different mechanisms, using DL- α -aminophenylacetic acid as the sorbate.

The ion-exchange phase of the SE-50 was found to be quasi-homogeneous, as confirmed by the invariability of the ionization constants of the ampholyte within the ionite (calculated for several different conditions). The cations of the ampholyte within the SE-50 were indistinguishable because of ion-exchange and nonexchange absorption. Graphs and tables of experimental and theoretical data are given in the paper.

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UDC 533.72

USSR

BULYGA, A. V.

"Applicability of the Hyperbolic Equation of Thermal Conductivity for Describing the Laws of Transport in Rarefied Gases"

Minsk, Doklady Akademii Nauk BSSR, Vol 14, No 12, 70, pp 1078-1081

Abstract: The difficulties involved in the theory of transport of momentum and kinetic energy through a rarefied gas are largely due to the inallowably great discrepancy between theory and experiment. Some feel that these difficulties are perhaps due to the Maxwell-Boltzmann integro-differential equation, in which the validity of equating the left-hand side of the equation (the differential operation over the function F of the molecular distribution at thermal velocities) to the right-hand side, (the integral part) becomes more questionable as the gas becomes more rarefied. And yet others have differing opinions, to the point where the author feels that a crisis exists in the kinetic theory of gases.

The author suggests that the problem of heat transport may also be solved phenomenologically, especially since it has been found that the Navier-Stokes hydrodynamic equations and the equation of thermal conductivity are valid for more rarefied gases than is ordinarily assumed. On the basis of kinetic theory a physically justified interpretation has been given for the

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USSR

BULYGA, A. V., Doklady Akademii Nauk BSSR, Vol 14, No 12, 70, pp 1078-1081

phenomenological coefficients, and a unique relationship has been established between these coefficients.

As a result of analysis it was found that at high vacuum, $c_v^p \rightarrow 0$, the term $\partial T / \partial \tau$ in

$$\tau_q \frac{\partial^2 T}{\partial \tau^2} + \frac{\partial T}{\partial \tau} = a \nabla^2 T,$$

is small in comparison to the term $\tau_q (\partial^2 T / \partial \tau^2)$ and can be ignored.

This equation can be used to describe stationary thermal conductivity when $\tau_q = \text{const.}$

In order to solve the problem as to the real precise value of the parameter $\tau_q(\tau, p)$ and its dependence on time, as well as the character and sign of the derivative $\partial \tau_q(\tau, p) / \partial \tau$, it is necessary to know the dynamics of the interaction between molecules in the process of their collisions.

2/2

USSR

UDC 613.2-099.-22.7 (Bac. cereus)

BULYGA, M. S., KUL'CHINSKAYA, I. I., and DOMANSKAYA, Ye. D., Volynskaya Oblast
Sanitary-Epidemiological Station, Lutsk

"Food Poisoning Caused by Bac. cereus"

Moscow, Voprosy Pitaniya, No 1, 1973, pp 86-87

Abstract: Within 1 to 6 hours after eating ice cream, a group of school children became sick, with symptoms including headache, abdominal pain, nausea, vomiting, diarrhea, but not elevated temperature. Bac. cereus but no other microorganism known to cause acute intestinal disease was isolated from suspected food, stomach contents, washings from implements, etc. An investigation of the place where the ice cream was made revealed that the ingredients had not been properly heated and that the mixture was not cooled according to regulations. In addition, general sanitary regulations had not been followed.

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USSR

UDC 621.317.331

YAREMKEVICH, S. K., SHMORGUN, Ye. I., KOCHAN, V. A., BULYGA, S. G.,
STRUK, R. I.

"Automatic Two-Coordinate Compensator for Resistometric Study of Steels and
Special Alloys"

Kontrol'no-izmerit. Tekhnika. Resp. Mezhved. Nauch.-Tekhn. sb. [Testing
and Measuring Equipment, Republic Interdepartmental Scientific and Techni-
cal Collection], 1971, No 11, pp 136-139, (Translated from Referativnyy
Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract
No 7.32.966).

Translation: An automatic two-coordinate compensator of accuracy class
0.05 is described, allowing graphs to be produced of the dependence of
resistance of metal specimens on temperature, which is necessary for resis-
tometric study of phase conversions in steels and special alloys. It is
demonstrated that the device can measure the emf of thermocouples in the
0-70 mv range and resistances of from 10^{-5} to 25 ohm (with currents passing
through the specimen of 1,000 to 0.5 a ac respectively). It is noted that
the desired graph sector can be drawn in enlarged scale. 1 Figure; 7
Biblio. Refs.

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ANO 013067

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4R 9025

AUTHOR-- BULYGIN, A.

TITLE-- GEZOTYPE - A COMPETITOR OF THE TELETYPE

NEWSPAPER-- TRUD, JANUARY 22, 1970, P 2, COL 5.

ABSTRACT-- GEORGIY ZAGOREL, SKIY, HEAD OF AN ENGINEERING GROUP AT THE LENINGRAD UNIVERSITY, S SCHOOL OF PSYCHOLOGY, HAS INVENTED AN APPARATUS, THE GEZOTYPE, WHICH WILL ENABLE TYPISTS TO INCREASE THEIR TYPING SPEED FOUR TO FIVE TIMES. THE GEZOTYPE IS AN ELECTRICAL TYPEWRITER WITH A SPECIAL ELECTRONIC KEYBOARD. THE INVENTION CAN BE USED FOR THE INPUT OF INFORMATION IN ELECTRONIC COMPUTERS. IT CAN ALSO BE USED AS A STENOGRAPHIC RECORDER. ANOTHER ADVANTAGE OF THE GEZOTYPE IS THE EASE OF LEARNING TO OPERATE IT, WHICH REQUIRES ONLY A FEW HOURS.

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BULYGIN, A. N.

polymers

THE (RHEOLOGY OF) POLYMERS
(Symposium in Moscow)

[Article by Doctor of Physical and Mathematical Sciences, A. N. Buligin, Moscow, *Vestnik Akademii Nauk SSSR, Russkoy, Vol. 19, No. 8, August 1972, pp. 119-121*]

Rheological investigations are being developed at the present time; firstly, as a separate part of physicochemical work pursuing the goal of establishment of formal correspondences between the molecular structure of a substance and its macroscopic properties and, secondly, as a section of the mechanics of continua which is interested in connections between the kinematic and dynamic parameters of a medium and in solving the corresponding boundary problems of the application to analysis of concrete technological processes. At the regular (seventh) symposium on the rheology of polymers, organized by the Institute of Petrochemical Synthesis (Acad. A. V. Tobolskiy) of the AS USSR and held on 10-14 April in Moscow, the main attention was given to the first direction of investigation. Participating in the sessions were over 100 persons, including a group of scientists from East Germany, Poland, Czechoslovakia, Bulgaria, about 100 reports were heard. Discussed at the symposium was a broad complex of problems connected with the physical chemistry and mechanics of polymeric materials, with the molecular nature of relaxation effects in amorphous and crystalline chains, and the construction of mechanical models for the quantitative description of the behavior of a polymer under different conditions of deformation with detailed comparison of the molecular parameters of reliably characterized samples and in the viscoelastic properties. Discussed with special interest was the problem of the liquid crystalline state and the influence of the physical structure of the system on its rheological properties.

The symposium was opened with the addresses of greeting of K. A. Andrianov and A. Ya. Ishlinskii, who emphasized the

comprehensive importance of rheological investigations to polymer sciences as a whole and numerous applications of high molecular compounds and composites based on them for structural purposes. Then was joined the survey report of L. V. Vinogradova who sketched contemporary concepts of the connection of the molecular structure and rheological properties of polymers. Systematic investigation of the viscoelastic properties and fluidity of amorphous polymers with different flexibility of the chain, conducted in recent years, have made it possible to quantitatively estimate the role of the length of the molecular chain in manifestations of mechanical properties characteristic of polymeric systems. In particular, the limiting conditions of deformation, when the polymer still preserves fluidity and can be processed in stable conditions, have been established. Another aspect of that problem is connected with the determination of general regularities of the transition from the fluid into the highly elastic state as a function of the intensity of deformation and with finding a correlation between the behavior of the polymer in different states and of its structure.

The reports of Yu. Ya. Golits, G. M. Viskovatov, Ye. A. Anisimov, and others were devoted to general problems of polymer physics in connection with study of the processes of viscoelastic and dielectric relaxation in different physical states and evolution of the correspondence of those processes with the conformational properties of polymeric chains. Also belonging to the same "physical" direction in rheology was the report of S. Ya. Frenkel on the problem of phase transformations arising as a result of deformation and their influence on the conditions and regime of flow of polymeric systems.

In a number of reports the structure of fluid polymers and the influence of the structure of the system on its rheological properties were discussed. Thus, A. A. Tager discussed in detail the correspondence of the structure and viscosity of solutions of polymers. The report of S. P. Radkay and co-authors presented the results of study of the rheological properties of anisotropic solutions of liquid-chain polymers which form a liquid crystalline phase. Possible models of liquid crystals were examined by L. G. Shalyska and a hydrodynamic theory of their behavior was proposed by E. L. Aepz and A. N. Bulavov. Structural problems connected with the liquid crystalline order were presented in survey form by I. G. Chistyakov, and the application of those concepts to the description of the intra- and submolecular liquid crystalline order was examined in the report of V. N. Tsvetkov and co-authors.

Also related to problems of polymer physics was the report of A. Zdzienicka (Poland), who told about new results obtained by him in the theory of polymeric lattices. V. B.

USSR

UDC 612.0+612.8+611.8

BULYGIN, I. A., (Editor)

Mekhanizmy Nervnykh i Gumoral'nykh Regulyatsiy (Mechanisms of Nerve and Humoral Regulation), Minsk, "Nauka i Tekhnika," 1971, 280 pp

Translation: Annotation: The book presents the latest data from the Institute of Physiology, Academy of Sciences Belorussian SSR concerning the structure and function of autonomic ganglia, a comparative description of two flows of impulses (centrifugal and centripetal) and their interaction, the afferent element of interoceptive reflexes, special features of the mechanisms of interoceptive and exteroceptive reflexes and their cortical representation, and neuro-humoral relationships during various organism reactions including vestibular reactions.

The book is intended for physiologists, biochemists, morphologists, and clinical practitioners.

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BULYGIN, I. A., Mekhanizmy Nervnykh i Gumoral'nykh Regulyatsiy, Minsk, "Nauka i Tekhnika," 1971, 280 pp

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USSR

UDC 612.8.015

BULYGIN, I. A., and REPRINTSEVA, V. M., Institute of Physiology, Belorussian Academy of Sciences

"Shifts in Serotonin Content of the Caudal Mesenteric Ganglion After Centripetal and Centrifugal Stimulation"

Minsk, Doklady Akademii Nauk BSSR, No 7, 1971, pp 649-651

Abstract: Ten minutes' electrical stimulation (current 5 v) of the lumbar splanchnic nerves in dogs (centrifugal stimulation) resulted in a significant increase in the serotonin content of the caudal mesenteric ganglion, whereas stimulation (current 14 v) of the central end of the hypogastric nerve (centripetal stimulation) for the same length of time significantly decreased the serotonin content of the ganglion. Possible mechanisms of these shifts are discussed.

I/1

1/2 028 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--PRIMARY CORTICAL RESPONSES AS FUNCTIONAL CHARACTERISTICS OF
ASCENDING SYSTEMS OF INTERNAL AND EXTERNAL ANALYSERS -U-
AUTHOR--BULYGIN, I.A., KACHURO, I.I.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOST 1970, VOL 20 NR 1, PP 115-122

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CAT, ANESTHESIA, SENSORY PHYSIOLOGY, NERVOUS SYSTEM, GLUCOSE,
SODIUM CHLORIDE, DIGESTIVE SYSTEM, SMALL INTESTINE, ELECTROPHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1982/0835

STEP NO--UR/0247/70/020/001/0115/0122

CIRC ACCESSION NO--AP0052270

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0052270

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ACUTE EXPERIMENTS ON CATS UNDER CHLORALOSE, PRIMARY RESPONSES (PR) WERE RECORDED TO DIFFERENT INTEROCEPTIVE AND EXTEROCEPTIVE AGENTS. PR TO ACOUSTIC, ELECTRO CUTANEOUS AND TACTILE STIMULI WERE RECORDED PRACTICALLY IN ALL THE EXPERIMENTS, AND TO ELECTRICAL STIMULATION OF THE CENTRAL PARTS OF THE SPLANCHNIC AND PELVIC NERVES IN 70PERCENT OF CASES. INTEROCEPTIVE ACTION OF A 60PERCENT GLUCOSE SOLUTION AND OF 20PERCENT SODIUM CHLORIDE SOLUTION ON THE STOMACH MUCOSA, AS WELL AS STRETCHING OF THE HOLLOW INTERNAL ORGANS WITH A RUBBER BULB, LED TO RARE RESPONSES OF THE PR TYPE (IN 10 TO 26PERCENT OF CASES) OF A LONG LATENCY, FROM 40 MSEC, TO 3.5-5.5 SEC., WHICH POINTS TO A CHAIN REACTION. PR WERE NOT RECORDED IN RESPONSE TO AN ADEQUATE STIMULATION OF THE MUCOSA OF THE STOMACH AND THE SMALL INTESTINE BY A 20PERCENT GLUCOSE SOLUTION, AND TO A TACTILE AND ELECTRICAL (1 TO 15 UPSILON) STIMULATION OF THE SEROSA OF THE ORGANS. THE CHARACTERISTICS OF THE RECORDED PR ARE DUE TO THE PECULIARITIES (PREVIOUSLY ESTABLISHED BY THE AUTHORS) OF AFFERENT INNERVATION OF EXTERO AND INTEROCEPTIVE ZONES, A DIFFERENT RELATIVE NUMBER OF ENDINGS OF SOMATIC (GROUP A) AND SYMPATHETIC AFFERENTS WHICH THEY RECEIVE.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--VARIATIONS IN THE CATECHOL AMINE LEVEL IN SEPARATE PARTS OF RAT
BRAIN UNDER THE INFLUENCE OF INTERO AND EXTEROCEPTIVE ACTIONS -U-
AUTHOR-(02)-BULYGIN, I.A., REPRINTSEVA, V.M.
COUNTRY OF INFO--USSR *B*
SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. BIYAL. NAVUK 1970, (1),
54-9
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CATECHOLAMINE, RAT, BRAIN, ADRENALINE, NORADRENALIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0510 STEP NO--UR/0440/70/000/001/0054/0059
CIRC ACCESSION NO--AP0121184
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121184

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADRENALINE (I) AND NORADRENALINE (II) CONTENT OF BRAIN PARTS WAS DETD. IN RATS FOLLOWING EXTEROCEPTIVE (PRESSURE ON THE SKIN) AND INTEROCEPTIVE (DISTENSION OF RECTUM) STIMULATION. NO I WAS FOUND IN THE BRAIN. IN CONTROL ANIMALS, HIGHEST II LEVEL (IN MU G-G) WAS IN HYPOTHALAMUS (0.931) AND LOWEST IN CORTEX (0.349) AND CEREBELLUM (0.371). EXTEROCEPTIVE STIMULATION LOWERED II CONTENT OF HYPOTHALAMUS (0.691), WHILE IN OTHER BRAIN PARTS IT REMAINED UNCHANGED. FOLLOWING INTEROCEPTIVE STIMULATION, A DROP IN II LEVEL OF CORTEX WAS OBSD. (0.212). SECTIONING OF THE SPINAL CORD INCREASED II LEVEL IN ALL BRAIN PARTS WITH EXCEPTION OF STRIATUM. IN THESE ANIMALS INTEROCEPTIVE STIMULATION INCREASED II LEVEL IN STRIATUM, WHILE EXTEROCEPTIVE STIMULATION LOWERED ITS LEVEL IN CEREBELLUM AND MIDBRAIN. ADMINISTRATION OF AMINAZIN CAUSED A DECREASE IN II LEVELS IN MEDULLA, MIDBRAIN, AND HYPOTHALAMUS (5 MG-KG) WHILE A HIGHER DOSE (20 MG-KG) DECREASED II CONTENT IN CORTEX, HYPOTHALAMUS, STRIATUM, AND MIDBRAIN. FOLLOWING PRETREATMENT WITH AMINAZIN, EXTEROCEPTIVE STIMULATION LOWERED II LEVEL OF CORTEX AND HYPOTHALAMUS, WHILE A DECREASE WAS SEEN IN MEDULLA AND HYPOTHALAMUS FOLLOWING INTEROCEPTIVE STIMULATION.
FACILITY: INST. FIZIOL., MINSK, USSR.

UNCLASSIFIED

USSR

UDC 669.14.018.44:539.4

BABICH, B. N., BHLYGIN, I. P., ZHUKOV, N. D., KRIVENKO, M. P., and PARFENOVA, N. I.
All-Union Scientific Research Institute of Aviation Materials (Moscow)

"The High-Temperature Strength of Dispersion-Hardening Composition Alloys
Potentially Suitable for Use in Engines"

Kiev, Problemy Prochnosti, No 11, Vol 73, pp 73-77

Abstract: An investigation is made of the high-temperature strength of the nickel-based dispersion-hardened alloys VDU-1 and VDU-2, hardened by finely dispersed, uniformly distributed particles of high-melting oxides of the ThO_2 type in the amount of 2-3% by weight. A study was made of the strength of semi-finished products in the form of rods 6-12 mm in diameter and sheets 0.8-1.2 mm in thickness, obtained from powders of the components via shaping, baking, and hot extrusion. Results are presented of an investigation of the short- and long-term strength, the creep, fatigue, and heat resistance of the alloys to establish their suitability for use in gas-turbine engines. An analysis was made of such strength features of these alloys as the nature of the temperature-time relationship of the strength, the scattering of the heat-resistance indicators, the sensitivity to loading instability, etc. in comparison to the strength properties of series-produced highly heat-resistant alloys. The
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USSR

BABICH, B. N., et al., Problemy Prochnosti, No 11, Vol 73, pp 73-77

obtained results demonstrate the fact that with regard to their high-temperature strength, dispersion-hardened alloys are potentially suitable for use in gas-turbine engines. 8 figures. 2 tables. 5 references.

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BULYGIN, I. P.

JPRS 56002

16 May 1972

UDC: 669.14.018.44.539.4

STATISTICAL EVALUATION OF CHARACTERISTICS OF HEAT-RESISTANT
MATERIALS FOR GAS-TURBINE ENGINES

[Article by I.P. Bulygin, N.I. Pashenova, L.N. Timofeyeva, and I.I. Tzunlin;
Moscow, Problemy Prochnosti, Russian, No 10, 1970, pp 20-24]

Change of Dispersion of the Characteristics of Long-Term Strength and Creep
As a Function of Test Temperature and Length

Characteristics of heat-resistance are among the random values, the precision of determination of which depends to a considerable degree on the quantity of experimental data. This fact can explain the tendency to determine those characteristics on the basis of the results of mass tests.

The results of statistical processing of mass tests for long-term strength and creep can be used to obtain additional information which contributes to increased reliability of evaluation of the working capacity of heat-resistant materials. One of those possibilities is study of the time and temperature dependence of certain statistical parameters of experimental results.

In the present work, on the example of two typical heat-resistant materials (EP109VD nickel-based alloy and E7961 steel) an investigation was made of the change of dispersion of the characteristics of resistance to deformation and destruction during creep as a function of the test temperature and length.

Three industrial casts of each material were selected for the investigation in accordance with the principles given in [1], in which is shown the possibility of estimating the mean values and dispersion of the "mark" characteristics of long-term strength by statistical processing of the results of tests of three or four casts, selected with consideration of the actual distribution of a large number of casts with respect to durability.

On the basis of the smelting method, chemical composition, type of intermediates and conditions of heat treatment

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[1 - USSR - 1]

USSR

UDC: 51.6

BULYGIN, V. P., UMYUKHIN, Ye. A.

"Behavior of an Automaton in a Situation of Probabilistic Selection as a Sequential Procedure of Distinguishing Two Complex Hypotheses"

V sb. Upr. i inform. protsessy v zhivoy prirode (Control and Information Processes in Animate Nature---collection of works), Moscow, "Nauka", 1971, pp 128-131 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V652)

[No abstract]

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BULYGINA, A. M.

SPRS 56, 499
14 JULY 72

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The results of the investigations revealed that the effectiveness of air purification in 5% of the cases exceeded 90%, and in 16% of the cases attained 100%. However, in 26% of the cases the effectiveness did not exceed 75%. The mean weighted effectiveness was 87%. It should be noted that when

Our investigations were made under conditions characterized by atmospheric contamination by finely dispersed aerosols whose concentration in individual cases exceeded the maximum admissible concentration (MAC). The investigations were made at several working places in precise accordance with the Methodika Gnedolovaya Razbivaniya Stokovoykh Vozdukhov (Deformation of the Protective Effect of the "Lopastok" Respirator (Under Operating Conditions)). The time required for taking a sample was 30-60 minutes. The duration of presence of the subjects continuously at the working place varied from two to three hours. During rest in a clean zone the respirator was removed and then used again.

The "Lopastok" mask is now the most widely used means for individual protection of the organs of respiration. The theoretical protective capability of the respirator, according to the instructions on use of the "Lopastok" respirator, is about 99%, that is, it almost does not allow from the interfering properties of filters made of PPF fabric. However, information on the actual effectiveness of respirators used under working conditions could not be found in the available literature.

Article by L. N. Savol'yev, A. M. Bulygina, M. V. Guchinsky and G. P. Koyzina; Moscow, Akademiya Voennoy Meditsiny Biologii i Meditsiny (Current Problems in Space Biology and Medicine), Moscow, 1971, pp 333-334.

SANITARY-HYGIENIC EVALUATION OF THE PROTECTIVE EFFECTIVENESS OF THE "LOPASTOK" MASK FOR FINELY DISPERSED AEROSOLS

USSR

UDC 669.822.004.2

BULYGINA, A. M., NIKIFOROVA, A. YE., SHALAYEV, I. L.

"Hygienic Evaluation of New Technological Schemes used for Hydrometallurgical Processing of Uranium Ores"

Vopr. gigiyeny truda na uranov. rudnikakh i obogatit. predpriyatiyakh -- V sb. (Problems of Hygiene of Labor in Uranium Mines and Beneficiation Enterprises -- collection of works), Moscow, Atomizdat Press, 1971, pp 23-27 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G272)

Translation: Labor hygiene has been improved and protection from radiation insured by introducing sorption, extraction, and mechanization of basic production operations and maintenance of the required air flow rates in open passages. Automation is necessary in the future in all steps of the technological process. It is also necessary to mechanize the operations of cleaning the facility, using the most effective detergents for deactivation and to use finishing materials for the walls and floors which are easily deactivated and do not sorb uranium compounds.

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- 72 -

1/2 007 UNCLASSIFIED
TITLE--BLEACHING OF FIBROUS MATERIALS -U-

PROCESSING DATE--20NOV70

AUTHOR--(G2)--KEMAROV, F.P., BULYGINA, G.K.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,407

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--04FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PAPER, PATENT, SODIUM HYDROXIDE, HYDROGEN PERCHLORATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1842

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132107

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AAC132107

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FIBROUS MATERIALS, E.G. PAPER, ARE BLEACHED IN CONTINUOUS OR BATCH APP. BY INTRODUCING SOLNS. OF H SUB2 O SUB2, NSCH, AND WATER GLASS SEP. AND WITH MIXING INTO THE SUSPENSION PREPARED TO SMALLER THAN OR EQUAL TO 40DEGREES. THE SUSPENSION IS THEN HEATED TO 55-70DEGREES AND BLEACHED. FACILITY: ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF THE CELLULOSE PAPER INDUSTRY.

UNCLASSIFIED

USSR

UDC: 678.01:677.52+539.4 (4)

ZHIGACH, A. F., TSIRLIN, A. M., SHCHETILINA, YE. A., SVETLOV, I. L., GRIGOR'YEV, V. I., SHAFRANOVICH, E. G., BULYGINA, T. I., and YARTSEV, V. A., State Scientific-Research Institute of Chemistry and the Technology of Elementoorganic Compounds, Moscow

"Mechanical Properties of Boron Fibers"

Riga, Mekhanika Polimerov, No 4, Jul-Aug 73, pp 641-647

Abstract: The authors study the strength distribution of boron fibers. The study is based on a large amount of experimental material. The results show that the strength of boron fibers can be sufficiently accurately described by the Weibull or by normal rules of distribution. The parameters of these distributions are determined. The typical defects in boron fiber macrostructure are isolated and described. Mean strength as a function of tested fiber length is studied experimentally.

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Acc. Nr:

AP0048484

Abstracting Service:

CHEMICAL ABST. 5/10

Ref. Code:

UR0070

13

104779p Dislocation structure arising in threadlike sapphire crystals during deformation under concentrated loading. Eulyanov, T. I.; Nazarova, M. P.; Sretlov, I. I. (USSR). Kristallografiya 1970, 15(1), 93-102 (Russ). Crystals obtained as a result of the high-temp. oxida. of Al powder or TiAl₃ in a flux of humid H₂ were investigated. The crystals, in the form of optically transparent plates (20-30 μ thick, 100-200 μ wide, 3-5 mm long) were subject to indentation under a load of 20 g over 5-10 sec, followed by heating in a H-O flame at $>1000^{\circ}$. The effect of deformation was detd. by etching the samples in H₃PO₄ at 320° . Under these conditions the prismatic loops of dislocation shifted according to their Burgers vectors. The results obtained showed a similarity in the behavior of sapphire and brittle semiconductors, which may be explained by the action of a similar mechanism of plastic deformation at room temp. J. Pabis-Machej

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REEL/FRA
19800192

187K

1/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--INTERACTION OF MANGANESE(II) IONS WITH VANADIUM(V) IN AQUEOUS
SOLUTIONS IN THE PRESENCE OF VARYING CONCENTRATIONS OF H PRIME POSITIVE
AUTHOR--(03)-ZOLOTAVIN, V.L., BULYGINA, V.N., BEZRUKOV, I.YA.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(2) 429-34

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLUTION CONCENTRATION, HYDROGEN ION CONCENTRATION, AQUEOUS
SOLUTION, MANGANESE COMPOUND, HYDROXIDE, VANADATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1983/0908

STEP NO--UR/0078/70/015/002/0429/0434

CIRC ACCESSION NO--AP0053832

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0053832

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF MN(II) WITH V(V) IN
AQ. SOLN. WAS STUDIED AT PH 2-12 AT VARIOUS INITIAL CONCNS. OF THE IONS.
MN(VO SUB3) SUB2.4H SUB2 O (I), MN(OH)VO SUB3. 2H SUB2 O, (MNOH) SUB4 V
SUB2 O SUB7.4H SUB2 O, AND (MNOH) SUB3 VO SUB4.3H SUB2 O SEP. AT WEAKLY
ACIDIC AND BASIC PH. EFFECT OF IONIC STRENGTH ON THE SOLY. OF I IS
TABULATED.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--INTERACTION OF MANGANESE (II) WITH DECAVANADATE IONS IN THE
PRESENCE OF LITHIUM, SODIUM, AND POTASSIUM CATIONS -U-
AUTHOR-(03)-BULYGINA, V.N., BEZRUKOV, I.YA., ZOLOTAVIN, V.L.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 435-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AQUEOUS SOLUTION, TERNARY FLUID SYSTEM, CHLORATE, VANADATE,
LITHIUM COMPOUND, SODIUM COMPOUND, POTASSIUM COMPOUND, CRYSTALLIZATION,
SOLUTION CONCENTRATION, SOLUTION ACIDITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/0773

STEP NO--UR/0078/70/015/002/0435/0438

CIRC ACCESSION NO--AP0104219

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104219

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NA SUB6 V SUB10 O SUB28, MN(CLO SUB4) SUB2 H SUB2 O SYSTEM WAS STUDIED BY THE METHOD OF CONTINUOUS CHANGE OF CONCNS. WHEN IONIC STRENGTH OF THE SYSTEM WAS ADJUSTED WITH NACLO SUB4 TO 1.0 AND THE H POSITIVE-V CONC. RATIO WAS SIMILAR TO 0.4, LARGE SHINY ORANGE CRYSTALS OF NA SUB4 MNV SUB10 O SUB28 .NH SUB2 O (I) SEPD. THE SYSTEM I-H SUB2 O IS VERY UNSTABLE AND WHEN KEPT FOR 2-3 DAYS AT PH 3.5-5.5 I DISPROPORTIONATED. BOTH K SUB4 MNV SUB10 O SUB28 .NH SUB2 O AND K SUB2 MN SUB2 V SUB10 O SUB28 .NH SUB2 O WHEN THE ANALOGOUS SYSTEM OF K SUB6 V SUB10 O SUB28 WAS KEPT AT A K-MN CONC. RATIO OF 10-19 AND AT PH 3; AT PH 5.5 AND A HPOSITIVE-V CONC. RATIO IS GREATER THAN 0.4, THE ANALOGOUS LI SUB6 V SUB10 O SUB28 SYSTEM FORMED ONLY 1 COMPD. HAVING A V-MN CONC. RATIO OF 3.33.

UNCLASSIFIED

USSR

UDC 538.4

BERMINOV, A. I., BUM, D. A., KOVALEV, L. K., YUDAS, V. I., Moscow

"Two-Dimensional Magnetic Fields in Magnetohydrodynamic Channels with Steel Walls with Finite Magnetic Reynolds Numbers"

Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 5, 1971, pp 3-11.

ABSTRACT: A study is made of the planar problems of the distribution of a two-dimensional magnetic field in magnetohydrodynamic channels with ferromagnetic walls with real Reynolds magnetic numbers and fixed hydrodynamic flow. A complex function describing the field from a unique point is used to construct an integral representation for the full magnetic induction, allowing any approximation to strict solution of the problem to be produced by digital computer. The influence function can be defined for various channels using mirror reflections and conformal mappings. The method is illustrated by numerical calculation of the distribution of the magnetic field as a conducting fluid flows along a flat, ferromagnetic wall and a fluid flows in the band between ferromagnetic walls. The influence of the external circuit and heterogeneous transverse velocity profile on distribution of the magnetic field is calculated.

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USSR

UDC 669.243:669.046.42

BUMAZHNOV, F. T., and ASTAF'YEV, A. F.

"Desulfurization Kinetics of a Nodulized Nickel Concentrate"

Moscow, Tsvetnyye Metally, No 5, May 73, pp 21-23

Abstract: Results are presented from an investigation into the oxidation of a nodulized nickel concentrate for the purpose of explaining some kinetic principles of this process. An ordinary nickel concentrate containing (in %): 66.88 Ni, 1.6 Co, 3.66 Cu, 1.5 Fe, and 24.07 S, produced by flotation separation of a nickel-Copper converter matte, was used. Desulfurization was carried out using an oxygen blow with a flow rate of 0.236 m/sec at temperatures from 900 to 1200°C. With a charge containing 18% S the concentrate was half-desulfurized in three minutes at 900°C, in 2 minutes at 1000°C, in 1.3 minutes at 1100°C, and in one minute at 1200°C. A kinetic equation was derived which indicated that total desulfurization could be accomplished in 1.5 hours at 900°C and in one hour at 1100°C for a nodulized nickel concentrate, while for an unnodulized concentrate the process would take one hour and 40 minutes, which is far better than the 10-15 hours required using a KS furnace. 3 figures, 1 bibliographic reference.

1/1

- USSR

UDC 669.2/8

BUMAZHNOV, F. T., and LENCHEV, A. S., Leningrad Mining Institute, Department of Metallurgy of Heavy Nonferrous and Noble Metals

"Sulfating Roasting of Cobalt Sulfide"

Ordzhonikidze, Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, No 2, 1972, pp 26-30

Abstract: The objective of this study was to determine the fundamental physicochemical characteristics of sulfating roasting cobalt sulfide. Included are curves reflecting the degree of CoS and iron desulfuration as a function of temperature and process duration as well as the degree of Co sulfatizing as a function of temperature and process duration with 20 and 10% SO₂ concentrations in the gas phase. Reaction formulas are presented to describe the mechanism of Co sulfatization during sulfating roasting and to show that cobalt sulfatization is a complex multistage process. The ratio of oxidation and sulfatization is governed by the thermodynamic conditions and physicochemical properties of the solid components. The diffusion of the gaseous components through the sulfate layer is hindered, which makes the ion-electron diffusion through the

1/2

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USSR

BUMAZHNOV, F. T. and LENCHEV, A. S., Ordzhonikidze, Izvestiya vysshikh
uchebnykh zavedeniy, Tsvetnaya metallurgiya, No 2, 1972, pp 26-30

sulfate layer, i.e., the migration of both ions and electrons through the
sulfate layer toward the interaction surface, the governing factor.
(3 illustrations, 1 table, 8 bibliographic references)

2/2

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE ELECTROSTATIC TRANSVERSE WELDING OF CONDUCTORS WITH LOCAL
DESTRUCTION OF INSULATION -U-
AUTHOR--(04)--RUDZIT, R.B., BUMBIYERIS, E.V., MOSKVIN, E.G., ZINOVYEV, G.V.
COUNTRY OF INFO--USSR *B*
SOURCE--MOSCOW, SVAROCHNOYE PROIZVODSTVO, NO 1, 70, PP 26-28
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--RESISTANCE WELDING, BIBLIOGRAPHY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/2032 STEP NO--UR/0135/70/000/001/0026/0028
CIRC ACCESSION NO--AP0118986
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118986

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY IS MADE OF THE PROBLEMS
DEALING WITH THE RESISTANCE TRANSVERSE WELDING OF THE INSULATED
CONDUCTOR WITH THE NONINSULATED ONE UNDER CONDITIONS OF A COMPLETE
PRESERVATION OF THE INSULATION BEYOND A DIRECT CONTACT BETWEEN PARTS.

UNCLASSIFIED

AA0040444

UR 0482

3-78

Soviet Inventions Illustrated, Section I Chemical, Derwent,

236667 RESISTANCE WELDING of an insulated conductor, 4 crossing a bore conductor 1, uses a copper contact piece 8 to dissipate the heat and prevent damage to the insulation outside the weld. A steady pressure by a deadweight is augmented by a pneumatic shock load when a magnet retracts a latch on a lever and a piston compresses the air in a diaphragm cylinder. The moment when the pulse welding current is switched on it governed by the adjustable position of a micro-switch relative to the lever. 30.10.67. as 1194056/25-27. R.B.RUDZIT et alia. Riga Polytechnic. (17.6.69.) Bul.7/3,2.69. Class 21h. Int.Cl. B23k.

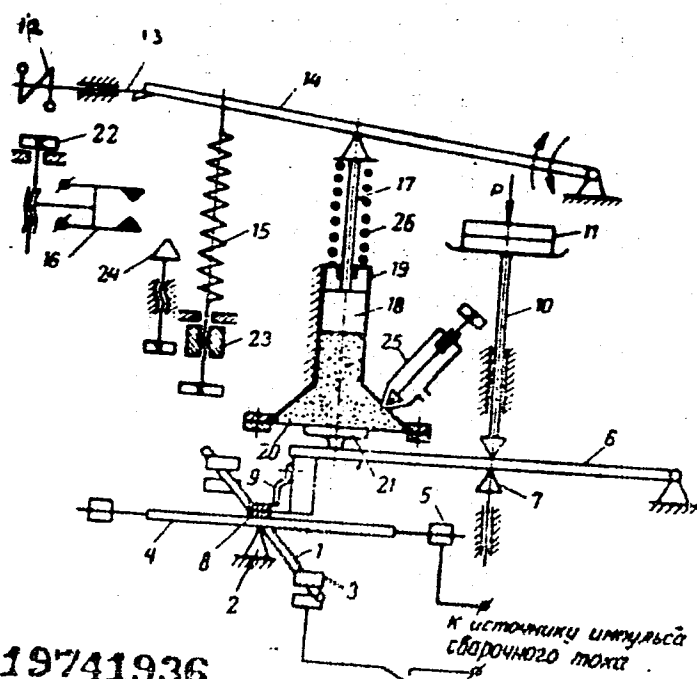
AUTHORS: Rudzit, R. B.; Bumbiyeris, E. V.; Moskvin, E. G.

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Rizhskiy Politekhnikheskiy Institut

19741935

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USSR

BUMISTROV, S. I., ROMANOVSKAYA, L. G., Dnepropetrovsk Institute
of Chemical Technology

"A Method for Preparing Arensulfonyl-N-(2-bromethyl)-arylamides"

USSR Author's Certificate No 250133, class 12o, 23/03 (C 07c),
filed 22 Apr 68, published 15 Jan 70 (from RZh-Khimiya, No 21 (II),
10 Nov 70, Abstract No 21 N591 by I. A. Mel'nikova)

Translation: Physiologically active compounds with the general
formula $R'SO_2N(R)CH_2CH_2Br$ (I) ($R(SO_2 =$ residue of the aromatic sulfo
acid, $R =$ residue of the aromatic amine) are obtained by reaction
of arensulfonylarylamide salts with $BrCH_2CH_2Br$ (II) in the presence
of quaternary salts. For example, to 100 ml of II stirred and
boiled are added 41.7 g of n-toluolsulfonyl-n-anisidine in 150 ml
of water (several drops at a time over a period of 1 1/2 - 2 hours)
with 6.8 g of NaOH and 10 g of $(Et_3)(PhCH_2)NCl$. The mixture is
boiled for 6 hours, the organic layer washed with weak NaOH solu-
tion and water, the excess II distilled off with water vapor,

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USSR

BUMISTROV, S. I., et al, USSR Author's Certificate No 250133, class 12o, 23/03 (C 07c), filed 22 Apr 68, published 15 Jan 70 (from RZh-Khimiya, No 21 (II), 10 Nov 70, Abstract No 21 N591 by I. A. Mel'nikova)

forming 44 g of I ($R' = n\text{-MeC}_6\text{H}_4$, $R = n\text{-MeOC}_6\text{H}_4$), yield 78%, melting point $80 - 1^\circ$. I is prepared in a similar fashion (R' , R , yield in %, melting point in $^\circ\text{C}$ are given): Ph, $n\text{-MeOC}_6\text{H}_4$, 95, 77-8; $n\text{-ClC}_6\text{H}_4$, $n\text{-MeOC}_6\text{H}_4$, 92, 93-5; $n\text{-MeC}_6\text{H}_4$, $n\text{-EtC}_6\text{H}_4$, 95, 103-5.

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USSR

UDC 542.91 + 661.718.1

NURETDINOV, I. A., ~~BUINA~~, N. A., GRECHKIN, N. P., and LOGINOVA, E. I.,
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy
of Sciences USSR

"Diphenyl- and Phenyl-diethylamidosenophosphoric Acid Esters"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 71,
pp 131-136

Abstract: A series of alkyl esters of diphenyl- and phenyl-diethylamido-selenophosphoric acid was synthesized. Selenium was added to ethyl diphenyl phosphite and after the initial exothermic reaction subsided, the mixture was heated for 1 hr at 100°, filtered and distilled under vacuum yielding ethyl diphenyl selenophosphate (I), b.p. 133-134°/0.02 mm, d_4^{20} 1.3709, n_D^{20} 1.5765. (I) was also obtained from the reaction of diphenyl selenochlorophosphate with $(C_2H_5)_3N$ and ethanol in benzene at 10-15°. The solid $(C_2H_5)_3N \cdot HCl$ formed was removed by filtration and (I) distilled in vacuum; both methods gave the identical product. Following compounds were obtained by the second reaction: ethyl phenyl diethylamidosenophosphate, b. p. 109-111°/0.001 mm, d_4^{20} 1.2707, n_D^{20} 1.5389; propyl diphenyl amidosenophosphate, b.p. 141-143°/

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USSR

NURETDINOV, I. A., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 71, pp 131-136

/0.002mm, d_4^{20} 1.3354, n_D^{20} 1.5703; and propyl phenyl diethylamidosenophosphate, b.p. 120-120.5°/0.001 mm, d_4^{20} 1.2423, n_D^{20} 1.5368. It was determined that methyl esters of diphenyl- and phenyldiethylamidosenophosphoric acids obtained analogously to the ethyl esters isomerize on heating to methyl-selenium esters of respective phosphoric acids.

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- 65 -

USSR

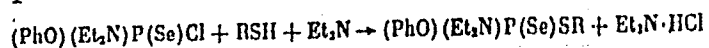
UDC: 542.91-661.718.1

NURETDINOV, I.A., BUTINA, N.A., GRECHKIN, N.P., LOGINOVA, E.I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

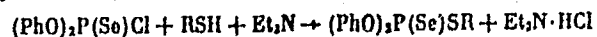
"Thiol Esters of Selenophosphorus Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, Mar 70, pp 708-710

Abstract: Phenyl-diethylamidosele-nochlorophosphate reacts with mercaptans and thiophenol in the presence of triethylamine to produce the corresponding thiol esters.



The ethyl- and butylthiol esters of phenyl-diethylamidosele-nophosphoric acid are liquids, while the phenylthiol ester of this acid is a crystalline substance. Thiol esters of diphenylselenophosphoric acid are produced by a similar reaction.



The resultant products have a considerably higher boiling point than thiol esters of phenyl-diethylamidosele-nophosphoric acid. The properties of eight esters of selenophosphorus acids are tabulated.

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1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THIOL ESTERS OF SELENOPHOSPHORIC ACIDS -U-
AUTHOR--(04)-NURETDINOV, I.A., BUINA, N.A., GRECHKIN, N.P., LOGINOVA, E.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 708-10
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--THIOL, ORGANIC PHOSPHORUS COMPOUND, ORGANOSELENIUM COMPOUND,
TRIETHYLAMINE, NMR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1780 STEP NO--UR/0062/70/000/003/0708/0719
CIRC ACCESSION NO--AP0123577
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--3000170

CIRC ACCESSION NO--AP0123577

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF 3 G ETSH AND 4.9 G ET
SUB3 N IN C SUB6 H SUB6 WITH 15 G PHOP (SE) (NET SUB2) CL, FINALLY 1.5
HR AT 35DEGREES, GAVE 63.4PERCENT PHOP (SE) (NET SUB2) SET, B SUB0.002
121-3DEGREES, D PRIME20 1.3011, N PRIME20 SUBD 1.5840; SIMILARLY WERE
PREPD. THE ANALOGS. 65.8PERCENT BUS, B SUB0.001 140 MINUS 1PERCENT,
1.2468, 1.5710; AND 53.8PERCENT PHS, M. 32-3DEGREES. EXCESS ETSNA IN
ET SUB2 D TREATED WITH (PHO) SUB2 P (SE) CL GAVE AFTER REFLUXING 5 HR
30PERCENT (PHO) SUB2 P (SE) SET, B SUB0.005 152-3DEGREES, 1.3986,
1.6223; SIMILAR REACTION WITH STOICHIOMETRIC RATIO OF REACTANTS AND RUN
IN C SUB6 H SUB6 2 HR AT 13-20DEGREES GAVE 37PERCENT SIMILAR PRODUCT, B
SUB0.002 146-7DEGREES, 1.3874, 1.6125. BOTH HAD SIMILAR NMR SPECTRA.
REACTION OF (PHO) SUB2 P (SE) CL WITH RSH AND ET SUB3 N GAVE (PHO) SUB2
P (SE) SR (R SHOWN): 71.6PERCENT ET, B SUB0.002 144-6DEGREES, 1.3876,
1.6180; 72.3PERCENT BU, B SUB0.001 151-2DEGREES, 1.3347, 1.6050;
58.2PERCENT PH, AND B SUB0.002 166-7DEGREES, 1.3744, 1.6490. THESE HAD
PHYS. CONSTS. VERY DIFFERENT FROM THOSE REPORTED PREVIOUSLY BY N. I.
ZEMLYANSKII ET AL. (1965, 1967); THOSE COMPS. MAY HAVE BEEN PRODUCTS
OF REACTION OF THESE WITH EXCESS RSNA. FACILITY: INST. ORG.
FIZ. KHIM. IM. ARBUZOVA, KAZAN, USSR.

UNCLASSIFIED

USSR

UDC 622.785.004.12

BUNAKOV, O. D., and VOLKOV, A. A.

"The Use of the Electric Properties of a Sinter for Automation of the Sintering Process"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals - Collection of Works), No 75, Metallurgiya Press, 1970, pp 8-14

Translation: Data are presented on the measurement of the electric conductivity of the sinter in the cup, the change of conductivity of the sinter with time, and the influence of fuel on the electric properties of the sinter. The relationship of resistivity of the sinter to its strength and charge composition is indicated. 3. figures; 3 tables; 2 biblio. refs.

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AA0039827- Buna Kov, O.D.

UR 0482

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Soviet Inventions Illustrated, Section I Chemical, Derwent,

3/10

237914 METALLISED SINTER PRODUCTION uses heated air for sintering and heated reducing gas, at controlled waste gas pressure. To upgrade the end product and prevent secondary oxidation, the reducing gas temperature (heated to 1200°C) is reduced to 100°C at a rate of 30-50 degrees/min. The gas is heated in regenerative checkers themselves heated by the sintering air re-circulating. After the charge has been placed on the throat grid, it is fired and sintered, keeping gas pressure above 1.0 atm. abs. The fine, low-sulphur

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end product occurs as a cake whose upper part is at 1000-1300°C. The reducing gas is passed through the bed, also under controlled pressure. Termination of this reducing blow operation is signified by the cessation of ferrous oxide reduction as the sinter cake cools back to 300-100°C, and thus prevents secondary oxidation. 1.4.67. as 1145585/22-2. MIKHALEVICH, A.G. et al. I.P. Bardin Ferrous Metallurgy Res. Inst. (11.7.69.) Bul.9/20.2.69. Class 18a. Int.Cl. C21b.

LD

AUTHORS: Mikhalevich, A. G.; Voskoboynikov, V. G.; Buyarov, A. A.
Bunakov, O. D.; Zhurakovskiy, B. L.; Migutskiy, L. R.;
Antonov, V. M.; Sholeninov, V. M.; and Tkachev, V. V.

Tsentral'nyy Nauchno - Issledovatel'skiy Institut
Chernoy Metallurgii imeni I. P. Bardina

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2.

19741188

USSR

UDC 622.785.004.12

BUNAKOV, O. D., and VOLKOV, A. A.

"The Use of the Electric Properties of a Sinter for Automation of the Sintering Process"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals - Collection of Works), No 75, Metallurgiya Press, 1970, pp 8-14

Translation: Data are presented on the measurement of the electric conductivity of the sinter in the cup, the change of conductivity of the sinter with time, and the influence of fuel on the electric properties of the sinter. The relationship of resistivity of the sinter to its strength and charge composition is indicated. 3. figures; 3 tables; 2 biblio. refs.

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USSR

UDC 678.5.06.539.374

ABIBOV, A. L., BUNAKOV, V. A., KOPEYKIN, V. N., and KONDRATENKO, R. M., Moscow Aviation Institute imeni S. Ordzhonikidze

"Determination of the Mechanical Properties of Wound Fiberglass"

Riga, Mekhanika Polimerov, No 1, Jan-Feb 73, pp 162-164

Abstract: A study was made of the problems of determining the transverse modulus of elasticity of a fiberglass material in the wound state and of the rheological properties of the material on the basis of short- and long-time creep curves for processes of winding taking place at normal and elevated temperatures. Rigidity of the investigated material in the transverse direction was determined by compression of 40 layers of glass fibers with EDT-10 binder in a device which did not restrict filtration of the binder in the direction of the reinforcing fibers. It was found that in winding by existing modes, the mechanical behavior of a layer depends essentially on time. To describe the relationship of deformations to load, it was proposed to use a nonlinear model of a Maxwell viscous-elastic body. In winding with prehardening and preheating (80°C) and times commensurable with the time of winding of one layer for large parts, this relationship can be ignored. The relationship of the modulus of elasticity for a layer to the level of loading and magnitude
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USSR

ABIBOV, A. L., et al., Mekhanika Polimerov, No 1, Jan-Feb 73, pp 162-164

of prehardening of the fiberglass strip is presented. Five figures, three bibliographic references.

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USSR

UDC[537.226+537.311.33]:[537+535]

BUNAREV, V. I., ZIMIN, V. N., KRASOVSKIY, V. M., RYABININ, I. V., and
TROITSKAYA, N. V.

"Structural and Electrophysical Properties of Aluminum Oxide-on-Silicon Films"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronic Engineering. Collection of Scientific and Technical Works on Microelectronics), 1971, vyp. 3(29), pp 75-79 (from RZh-Fizika, No 1, Jan 72, Abstract No 1YE1406 by authors)

Translation: The authors studied the structural and electrophysical properties of aluminum oxide films as a function of the procedures of their deposition on silicon, as well as the electrophysical properties of the Al-Al₂O₃-Si structure.

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USSR

UDC 669.245:589.23

IVANOV, R. D., URAZALIYEV, U. S., TIKHONOV, A. A., SALANSKIY, N. M., and BUNAREV, V. I.

"Effect of Plasma on the Structure and Magnetic and Electric Properties of Thin Permalloy Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 34, No 2, Aug 72, pp 256-262

Abstract: The effect of plasma and of physico-technological properties of the cathodic precipitation method on the structure and magnetic and electric properties of thin Permalloy films was experimentally investigated. The films were produced by atomization of the 79NM alloy. Their crystalline structure was investigated by methods of electron beam optics, and their chemical composition was tested by the x-ray fluorescence analysis method. The bombardment of the substrate surface by charged particles was found to produce a diversity in the microstructure of the film. The mechanism of forming precipitated cathodic films is in full agreement with thermodynamic principles for nonequilibrium statistical systems. Five figures, five bibliographic references.

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Miscellaneous

USSR

UDC 539.377

PIDSTRYGACH, Ya. S., Academician of the Academy of Sciences of the UkrSSR,
BURAK, Ya. Y., ZOZULYAK, Yu. D., Physicomechanical Institute, Academy of
Sciences of the UkrSSR

"On Determining the Optimum Force Load for the Case of Localized Heating of
a Cylindrical Shell"

Kiev, Dopovidi Akademii Nauk Ukrainskoi RSR: Seriya A, Fizyko-Tekhnichni
ta Matematychni Nauki, No 11, Nov 72, pp 1024-1028

Abstract: The authors formulate and solve the problem of determining the
optimum external normal load for the case of axisymmetric localized heating
of an infinite cylindrical shell. The condition of minimum elastic energy
of the shell is taken as the functional criterion of optimality. The ef-
fectiveness of the resultant solution is illustrated by a specific example.

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1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EXPERIMENTAL DETERMINATION OF (MU PRIME NEGATIVE, NU) REACTION
PROBABILITY ON ALUMINUM 27, SILICON 28, AND VANADIUM 51 NUCLEI -U-
AUTHOR--(05)-BUNATYAN, G.G., YEVSEYEV, V.S., NIKITYUK, L.N., POKURVSKIY,
V.N., RYBARKOV, V.N.
COUNTRY OF INFO--USSR
SOURCE--YAD. FIZ. 1970, 11(4), 795-9
DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS

TOPIC TAGS--PROBABILITY, ALUMINUM ISOTOPE, SILICON ISOTOPE, VANADIUM
ISOTOPE, NUCLEUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1027

STEP NO--UR/0367/70/011/004/0795/0799

CIRC ACCESSION NO--AP0124686

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0124686
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACTIVATION METHOD WAS USED TO MEASURE RELATIVE PROBABILITIES OF THE MU PRIME NEGATIVE, NU) REACTION ON PRIME27 AL, PRIME28 SI, AND PRIME51 V NUCLEI. THE PROBABILITY W OF THE PROCESS (MU PRIME NEGATIVE, NU) WAS CALCD. THE RESP. RESULTS WERE 10 PLUS OR MINUS 1, 28 PLUS OR MINUS 4, AND 10 PLUS OR MINUS 1PERCENT. EXPTL. DATA WERE COMPARED TO THEORETICAL VALUES WHICH WERE CALCD. ON THE BASIS OF THE THEORY OF FINITE FERMI SYSTEMS. DISCREPANCIES BETWEEN THE EXPTL. AND THEORETICAL VALUES ARE DISCUSSED. THE THEORETICAL VALUES OF W(MU PRIME NEGATIVE, NU) ARE DETD. BY THE CAPTURE FROM A SMALL NO. OF ENERGY LEVELS OF THE PRODUCT NUCLEUS DISCRETE SPECTRUM. THUS, SMALL ERRORS IN THE DETN. OF TRANSFER PROBABILITY AS WELL AS THE POSITION OF THE NUCLEUS SIGNIFICANTLY AFFECT THE THEORETICAL VALUES OF W(MU PRIME NEGATIVE, NU). FACILITY: OB'EDIN. INST. YAD. ISSLED., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 616.981.42+591.147+445

SAKANYAN, S. Sh.; TOROSYAN, S. Ye.; BUNATYAN, L. O.; Armenian Scientific Research Institute of Animal Husbandry and Veterinary Science and Yerevan Veterinary Institute

"Role of the Adrenals, Pancreas, and Gonads in the Mechanism of Cerebrocortical Influence on Postvaccinal Immunity Against Brucellosis"

Yerevan, Biologicheskii Zhurnal Armenii, No 6, 1971, pp 75-77

Abstract: Earlier experiments showed that moderate amounts of caffeine stimulate postvaccinal immunity against brucellosis and that the hypophysis and thyroid play an important part in the process. In rabbits vaccinated against brucellosis and then adrenalectomized, antibody formation was inhibited and phagocytosis by reticuloendothelial cells decreased regardless of whether or not animals received caffeine, i.e., elimination of adrenal function blocked the effect of caffeine. Thus, it would appear that the adrenals are involved in the mechanism of transmission of nerve impulses (stimulated by caffeine) to the

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USSR

SAKANYAN, S. Sh., et al, Biologicheskii Zhurnal Armenii, No 6,
1971, pp 75-77

organs responsible for the development of immunity. The pancreas
and gonads, however, do not participate in the process.

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Immunology

USSR

UDC 616.981.42+591.481.2

SAKANYAN, S. Sh., TOROSYAN, S. Ye and HUNATYAN, L. O., Armenian Scientific Research Institute of Animal Husbandry and Veterinary Science, Yerevan Zoo-veterinary Institute

"The Effect of Caffeine on the Effectiveness of Brucellosis Vaccination during Inhibition and Stimulation of Pituitary Function"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 23, No 5, May 70, pp 94-96

Abstract: The effect of caffeine on the effectiveness of brucellosis vaccination was studied in rabbits with blocked and activated pituitary function. One group of rabbits was given cortisone (150 mg/kg) once daily for 5 days. A second group was given caffeine (1.0 ml of 1% solution). A third group was immunized after subcutaneous injection of somatotrophic hormone, in a dose of 1.2 g/kg. A fourth group served as controls for caffeine and a fifth as controls for immunization. After 30 days, Brucella cultures were subcutaneously injected into all animals. Experiments indicated that immunity was more pronounced when caffeine was administered. It was concluded that the nerve stimulus produced by caffeine is transmitted to other organs generating immunity through the pituitary gland.

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USSR

UDC 537.533.8

ARIFOV, U.A., KASYMOV, A. KH., ~~BUNAZAROV, D.~~

"Secondary Electron Emission Of Sodium And Potassium Films"

[Nauchn. tr.] Tashkent. politekhn. in-ta ([Scientific Works] Tashkent Polytechnical University), 1970, No 55, pp 321-328 (from RZh--Elektronika i yeye primeneniye, No. 12, December 1970, Abstract No 12A16)

Translation: An investigation is conducted by the oscillographic method of the total energetic spectrum of secondary electrons and its separate segments as a function of the thickness of Na and K films on Mo. In proportion to the deposition of the films, a change was observed of the intensity of the maximums of the corresponding emission of slow Auger electrons, the peaks of the characteristic losses, and the elastically reflected electrons. The results are explained by the change of operation of the system's work function in the process of deposition of the film. 3 ill. & ref. N.S.

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USSR

UDC 669.71.053.4

NI, L. P., GOL'DMAN, M. M., SOLENKO, T. B., ~~BUNCHUK, I. V.~~, KHALYAPINA, O. B.

"Oxides of Iron in the Production of Alumina"

Okisly Zheleza v Proizvodstve Glinozema [English Version Above], Alma-Ata, Nauka Press, 1971, 136 pages. (Translated from Referativnyy Zhurnal Metallurgiya, No 3, 1972, Abstract No 3G123K from the resume).

Translation: Literature and experimental data are presented on the investigation of systems including the oxides of Fe, Na, Al, Si and Ca, under hydrothermal conditions. The behavior of the oxides of Fe in hydrochemical processes of alumina production is described in detail. The production methods, composition, and structure of compounds containing Fe are presented. Particular attention is given to the chemical compounds synthesized. 43 figs; 29 tables; 392 biblio refs.

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USSR

UDC 661.143

DATSENKO, A. M., GURETSKAYA, Z. I., BUNDEL', A. A.

"Discovery of the Peculiarities in the Composition and Structure of Sulfide Luminophors for Color Kinescopes Capable of Affecting their Strength when Manufacturing a Mosaic Screen"

Tr. Mosk. khim.-tekhnol. in-ta im. D. I. Mendeleyeva (Works of the Moscow Chemical Technology Institute imeni D. I. Medelejev), 1972, vyp. 71, pp 85-87 (from RZh-Khimiya, No 5(II), 1973, Abstract No 5L208)

Translation: A study was made of the causes of the 40-50% reduction in brightness of K-74 (a solid solution of ZnS. CdS: Ag) and K-75 (ZnS:Ag) luminescent compounds when depositing these compounds on the screens of color television kinescopes. The effect of the magnitude of the heat resistance, the chemical composition and the structure on the reduction in brightness of the glow of the compounds was determined. With a CdS content in the sulfide compound of <37%, the decrease in brightness was primarily caused by the solution of the Fe energy dissipator; for high CdS concentrations this reduction was caused primarily by the decay phenomena. The treatment of the screen surface with K silicate used at the plants has an inhibiting effect on the decay processes, but the decay without PVS

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USSR

DATSENKO, A. M., et al., Tr. Mosk. khim.-tekhnol. in-ta im. D. I. Mendeleyeva, 1972, vyp. 71, pp 85-87

[polyvinyl alcohol?] proceeds appreciably farther than without treatment by K silicate. The surface microstructure of the luminescent compound differs sharply even within the limits of one batch of the compound. The surface state of the individual microcrystals also differs sharply. The incompleteness of homogenization of the solid solutions of the luminescent compounds is noted. The removal of the PVS when heating the compounds at 430° is a complex process with competing reactions: the formation of low-molecular volatile materials and the formation of strongly carburized films.

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Acc. Nr:

AP0053769

Abstracting Service:

CHEMICAL ABST.

5-70

Ref. Code:

UR0366

110862b Possible synthesis of isomeric methylcyclohexyl chlorides and bromides from the corresponding methylcyclohexanols under the influence of phosphorus pentahalides and hydrohalic acids. Byndel, Yu. G.; Yuldashev, A. M.; Reutov, O. A. (USSR). Zh. Org. Khim. 1970, 6(2), 321-5 (Russ). The action of PCl_5 on *cis*-2-methylcyclohexanol (*cis*-I) gave a mixt. of products contg. 1-chloro-1-methylcyclohexane, the *cis* and *trans* isomers of 1-chloro-2-methylcyclohexane (II), and α -chloroethylcyclopentane (III). *trans*-I gave with PCl_5 II and III only. *cis*-I or *trans*-I analog with PBr_3 gave different product distribution, including 1-methylcyclohex-1-enes. *cis* or *trans*-3-Methylcyclohexanols or 4-methylcyclohexanols gave only isomeric methylcyclohexyl halides and no cyclopentane derivs. The reactions of 4-methylcyclohexanols proceed 80-90% with inversion of configuration. The action of concd. HCl or HBr on the above methylcyclohexanols gave complex mixts. from which *cis*- and *trans*-2-methylcyclohexyl chlorides were sepd. by gas chromatog.

CPJR

REEL/FRAME

19830832

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Acc. Nr:

AP0041509

Abstracting Service:

CHEMICAL ABST.

BUNDEL

Yu. G.

Ref. Code:

4/70 UR0366

89562s Rearrangement of carbonium ions during the deamination of some primary alkylamines. Bundel, Yu. G.; Levina, I. Yu.; Reutov, O. A. (USSR). Zh. Org. Khim. 1970, 9(1), 3-5 (Russ). Isobutylamine (I), 1-amino-2-methylbutane (II), and 1-amino-2-ethylbutane (III) were deaminated at 0° in HClO₄ soln. The product distribution (in vol. %), detd. by gas chromatog. was as follows: I → 24.5 iso-BuOH + 22.5 sec-BuOH + 53 *tert*-BuOH; II → 14.5 2-methylbutanol + 8.5 2-pentanol + 6.5 3-pentanol + 72 2-methyl-2-butanol; III → 12 2-ethylbutanol + 3-hexanol + 3-methyl-3-pentanol. The isomerizations involve not only the migration of H⁺, but also Me and Et group migrations. Et group migrates in preference to Me group due to steric factors and relative stability of the transition carbonium ions.

CPJR

me

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REEL/FRAME
19751377

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ISOTOPIC EXCHANGE OF HYDROGEN IN SUBSTITUTED BENZYL MERCURY
CHLORIDES -U-
AUTHOR--(93)-BUNDEL, YU.G., ROZENBERG, V.I., REUTOV, O.A.
COUNTRY OF INFO--USSR *B*
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 918-20
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--ISOTOPE EXCHANGE, HYDROGEN, BENZENE DERIVATIVE, ORGANIMERCURY
COMPOUND, DEUTERIUM COMPOUND, CONJUGATE BOND SYSTEM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1011 STEP NO--UR/0062/70/000/004/0918/0920
CIRC ACCESSION NO--AP0134723
UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0134723
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. H,D EXCHANGE WAS REPORTED FOR ARCH
SUB2 HGLL (TEMP. SHOWN IN PARENTHESES) AND DCL IN DRY DIOXANE (RATE
CONSTS. SHOWN AS K TIMES 10 PRIME2, MIN PRIME NEGATIVE1): PH 1.4
(120DEGREES); 0.4 (100DEGREES); O,MEC SUB6 H SUB4 1 (100DEGREES); P,MEC
SUB6 H SUB4 0.88 (100DEGREES); M,MEC SUB6 H SUB4 10 (100DEGREES); 3,5,ME
SUB2 C SUB6 H SUB3 1.31 (20DEGREES); 2,6,ME SUB2 C SUB6 H SUB3, 0.5
(120DEGREES); AND 2,4,5,ME SUB3 C SUB6 H SUB2 0.6 (120DEGREES). THE
EFFECT OF SUBSTITUENTS ON THE RATE OF H,D EXCHANGE WAS CORRELATED WITH
THE EFFECT ON THE RATE OF DEMETALATION. THIS INDICATED A SIMILARITY
BETWEEN THESE REACTIONS WHICH INCLUDE A TRANSFER OF THE REACTION CENTER
FROM THE ADJACENT C ATOM INTO THE AROMATIC RING. THE H,D EXCHANGE IN
THE 2,4,6,TRIMETHYLBENZYL MEMBER, SHOWN ABOVE, PROBABLY FOLLOWS A
MECHANISM DIFFERENT FROM THOSE OF THE OTHER ANALOGS AND THE EXCHANGE
OCCURS AT THE M POSITION RELATIVE TO THE HG.GROUPING, INDEPENDENTLY OF
ANY CONJUGATION EFFECT IN THE C,HG BOND, WHICH DOES TAKE PART IN THE
REACTION OF OTHER MEMBERS OF THE CLASS. FACILITY: MOSK. GOS.
UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

Powder Metallurgy

USSR

UDC: 621.762:669.018.29

BUNDUR, G. K., KOSAREVA, I. B., TSUKERMAN, S. I.

"Production of Corrosion-Resistant Parts by Powder Metallurgy"

Nizkovol'tn. Apparatostroyeniye [Low-Voltage Apparatus Construction -- Collection of Works], Kiev, Tekhnika Press, 1973, pp 99-104 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G418, by S. Krivonosova).

Translation: A technological process is suggested for preparation of parts of Fe powder for automatic breakers, based on cementation, diffuse chromizing and heat treatment. The results of the tests of corrosion resistance and wear resistance showed that parts of type 3Kh13 stainless steel can be replaced by metal ceramic diffusion chromized parts, with a savings of 87,000 rubles per year, saving 27 tons of stainless steel per year. 2 figures, 1 table, 5 biblio. refs.

1/1

USSR

UDC 612.8.21(99)

BUNDZEN, P. V.

"Principal Features of Psychophysiological Studies in the Antarctic"

Moscow, Antarktika, Doklady Komissii, No 11, 1972

Abstract: The article summarizes the experimental data obtained during the 12th Soviet Antarctic Expedition. The purpose of the work was to study the psychological and social problems of a small isolated group and to analyze changes in the nonspecific regulatory functions of the central nervous system and integrative functions of the brain of a man-operator exposed to extreme conditions.

The psychological and sociological studies resulted in the discovery of several criteria that determine the process of man's adaptation in the Antarctic and that influence the compatibility of members of a small group. The neurophysiological studies showed that changes in the seasonal light regime and psychological stress result in pronounced impairment of the autoregulatory functions of the brain. The process of optimum regulation of the level of alertness is disrupted under these conditions. This in turn debilitates the central nervous system and alters the capacity of the analysors. Emphasis is placed on the most important directions of research on the psychophysiological

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USSR

BUNDZEN, P. V., Antarktika, Doklady Komissii, No 11, 1972

status of man in the Antarctic. Research goals are based on a generalization of the data obtained by physicians with the Soviet Antarctic Expedition and are developing in accordance with the principles of ecological physiology.

2/2

USSR

UDC 612.821.2+616.831-073.97

BEKHTEREVA, N. P., BUNDZEN, P. V., MATVEYEV, YU. K., and KAPULNOWSKIY, A. S.,
Institute of Experimental Medicine , Academy of Medical Sciences USSR, Leningrad

"Functional Reorganization of the Activity of Human Brain Neuronal Assemblies
in Short-Term Memory"

Leningrad, Fiziologicheskii Zhurnal SSSR, No 12, 1971, pp 1,745-1,761

Abstract: The functional reorganization of the activity of cerebral neuronal assemblies was studied by means of verbal tests (3 to 5 words of one syllable) of short-term memory given to in four persons with 36 or more electrodes implanted in different subcortical structures and various portions of the cortex. The data were processed with the assistance of analog and digital computers using continuous amplitude discrimination of multicellular activity, dynamic selective correlation, and classification, factor, and information analysis. The experiments showed that the trace processes originating in the neuronal assemblies at the time of presentation of the verbal stimuli took on the appearance of spatial and temporal patterns reflecting the dynamic spectra of the acoustic signals used. Retention of the words led to substantial reorganization of the trace processes in accordance with the general laws governing the reconstruction of self-organizing biological systems and occurring against a background of relative stability of the resulting functional organization of the neuronal assemblies.

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1/2 031 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--MULTIPARAMETER AUTONOMOUS EEG ANALYZER FOR OPERATIVE TESTING OF THE
FUNCTIONAL STATE OF A HUMAN OPERATOR -U-
AUTHOR--(05)-ATABEKYANTS, A.I., AKHUTIN, V.M., BUNDZEN, P.V., KUCHUK, G.A.,
NEROSLAVSKIY, I.A.
COUNTRY OF INFO--USSR
SOURCE--FIZIOLOGICHESKII ZHURNAL SSSR, VOL. 56, MAR. 1970, P 443-446
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MEDICAL APPARATUS, ELECTROENCEPHALOGRAPHY, BRAIN, BIOPOTENTIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0676

STEP NO--UR/0239/70/056/000/0443/0446

CIRC ACCESSION NO--AP0117901

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117901

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BRIEF DESCRIPTION OF A PORTABLE AUTONOMOUS COMPLEX EEG ANALYZER WHICH MAKES IT POSSIBLE TO PERFORM CONTINUOUS PROCESSING OF BRAIN BIOPOTENTIALS WITH RESPECT TO A NUMBER OF AMPLITUDE, PHASE, AND FREQUENCY PARAMETERS. THE DEVICE CONSISTS OF THREE PAIRED FREQUENCY FILTERS, THREE CHANNELS FOR MEASURING PHASE SHIFTS BETWEEN ANY TWO EEG LEADS, AND A CHANNEL FOR ANALYZING THE OSCILLATION FREQUENCY OF THE ENVELOPE OF THE MAIN RHYTHM. THE DEVICE IS DISTINGUISHED BY THE POSSIBILITY OF PERFORMING CONTINUOUS COMPLEX MEASUREMENTS OF BIOELECTRIC ACTIVITY WITHOUT THE USE OF EXPENSIVE COMPUTER HARDWARE AND WITHOUT REQUIRING THE PARTICIPATION OF HIGHLY QUALIFIED ENGINEERING PERSONNEL IN THE EXPERIMENTS. FACILITY: AKADEMIIA MEDITSINSKIKH NAUK SSR SEVERO ZAPADNYI ZAOCHNYI POLITEKHNICHESKII INSTITUT, LENINGRAD, USSR.

UNCLASSIFIED

APPLICATION OF FACTOR ANALYSIS TO THE STUDY OF THE
FUNCTIONAL ORGANIZATION OF DYNAMIC
CHARACTERISTICS OF CEREbral ELECTRICAL ACTIVITY

[Bundzen, P.V., N.N. Vasilievskiy, A.S. Kaplunovskiy, and V.V. Shabayev,
Prilozhenie faktornogo analiza izucheniya funktsional'noy organizatsii
dinamicheskikh kharakteristik bioelektricheskoy aktivnosti golovnoy
mozga, Sovetskoye Psihologicheskoye Zhurnal of the USSR, Vol. 57, No. 7, 1971,
pp. 969-973, Russian]

Department of Ecological Physiology (Director N.N. Vasiliev-
skiy) and the Pavlov Physiological Department (Director M.M.
Khannabov) Institute for Experimental Medicine, Academy of
Medical Sciences, USSR, Leningrad.

The characteristics and methods of factor analysis, as
well as the algorithm and program of the principal components
method for the "Promin" digital computer system are described.
The theoretical possibility of applying factor analysis in neuro-
physiology is shown in: a) an investigation of the structure
of a single electrophysiological process on the basis of elec-
troencephalographic dynamic spectra calculations, and b) a com-
parison and classification of poststimulation histograms of the
induced activity of projection cortical neurons in response to a
conditioned stimulus.

Thus, factor analysis is valuable as a statistical method
in neurophysiology, making it possible to present experimental
data in a convenient form and aiding in a purposeful search.

As an integral statistical method of evaluating the functional orga-
nization of complex dynamic process, factor analysis is now receiving
increasing application in physiological research [5, 8, 9, 12, and 13].

The purpose of the present study was to develop a program and to
apply factor analysis for statistical processing of experimental neuro-
physiological material for the purpose of clarifying the set of condi-
tions (factors) which determine the dynamic characteristics of cerebral
bioelectrical activity, particularly when studying control processes at
the level of continuous wave and pulse activity of the higher regions of
the central nervous system.

As is well known [3, 4, and 14], at the basis of factor analysis is
the calculation of a correlation matrix and its reduction to a more com-
pact form that lends itself more easily to interpretation.

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DEPOSITION OF ZINC FROM ACID SULFATE SOLUTIONS ON TITANIUM CATHODES

-U-
AUTHOR--(03)-BUNDZHE, V.G., DUNAYEV, YU.D., KIRYAKOV, G.Z.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK KAZ. SSR. SER. KHIM. 1970, 20(2), 73-5

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TITANIUM, METAL ELECTRODE, TITANIUM HYDRIDE, ZINC PLATING,
METAL DEPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/1495

STEP NO--UR/0360/70/020/001/0073/0075

CIRC ACCESSION NO--AP0125123

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125123

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. ZN WAS DEPOSITED ON TI ELECTRODES FROM SOLNS. CONTG. ZN 60 AND H SUB2 SO SUB4 100 G-L. AT 25, 40, AND 60DEGREES AND C.DS. OF 40-4000 A-M PRIME2. FOR COMPARISON, ZN WAS ALSO DEPOSITED ON AL CATHODES. THE CURRENT EFFICIENCY ON THE AL CATHODE WAS HIGH UNDER ALL TESTED CONDITIONS, WHEREAS ON TI CATHODES A GOOD EFFICIENCY WAS OBTAINED ONLY AT SIMILAR TO 2000 A-M PRIME. ZN PPT. WAS DEPOSITED ON TI ONLY AT LOW TEMPS., BUT EVEN AT 25DEGREES, THE DEPOSITION OF ZN COULD STOP AND THE ALREADY DEPOSITED ZN BEGIN TO DISSOLVE. THIS WAS ATTRIBUTED TO THE FORMATION OF TI HYDRIDE, THE FORMATION OF WHICH IS FAVORED BY INCREASING TEMP. FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

1/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--STABILITY OF LEAD BASED BINARY ALLOYS IN SULFATE SOLUTION -U-

AUTHOR--(04)-DUNAYEV, YU.D., TSKHE, L.A., BUNDZHE, V.G., KIRYAKOV, G.Z.

COUNTRY OF INFO--USSR

SOURCE--ZASHCH. METAL. 1970, 6(2), 237-9

DATE PUBLISHED-----70

B

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--LEAD ALLOY, TIN ALLOY, BISMUTH ALLOY, SOLID SOLUTION,
CORROSION RATE, ANTIMONY ALLOY, SULFATE, AQUEOUS SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3008/1045

STEP NO--UR/0365/70/006/002/0237/0239

CIRC ACCESSION NO--AP0138067

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138067

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CORROSION OF PB-SB, PB-SN, AND PB-BI ALLOYS IN 2N H SUB2 SO SUB4 AT ROOM TEMP. WAS INVESTIGATED. TEH PHASE DIAGRAMS AND DEPENDENCES OF THE INITIAL AND STATIONARY POTENTIAL OF THE ALLOYS ON THEIR COMPN. ARE GIVEN IN FORM OF DIAGRAMS. THE CORROSION PROPERTIES OF MATERIALS DEPEND, TO A GREAT DEGREE, ON THEIR STRUCTURE; THE CORROSION RATE OF HYPEREUTECTIC ALLOYS RAPIDLY INCREASES WITH THE CONC. OF A 2ND COMPONENT, WHEREAS THE HYPOEUTECTIV ONES SHOW LITTLE CORROSION SLIGHTLY DEPENDING ON THE AMT. OF THE 2ND COMPONENT. THE CORROSION RESISTANCE OF THE PB BASED SOLID SOLNS. FOLLOWS THE TAMMANN LAW.

FACILITY: INST. KHIM. NAUK., ALMA-ATA, USSR.

UNCLASSIFIED

Acc. No. **AP 0034398**

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 2, pp 145-150

EFFECT OF FATS ON INTENSITY OF STAINING WITH VITAL STAINS IN CELLS
OF *PENICILLIUM CHRYSOGENUM*

Yudina, O. D.; Dmitriyeva, S. V.; Bunevaya, T. A.

National Institute for Antibiotics, Moscow

It was shown that absorption of the vital stains, such as neutral red and erythrosin by the cytoplasm of *P. chrysogenum* grown in the presence of fat was more intensive. Addition of fat to the medium had a transitory toxic effect on the young cells of the penicillin-producing organism. Addition of fat to old cultures of the penicillin producer resulted in severe damages of the cytoplasm. Sunflower oil was more toxic for the cells of *P. chrysogenum* as compared to whale fat.

D. n.

1/1
REEL/FRAME
19711058

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STUDYING THE DEPENDENCE OF THE WEAR RESISTANCE OF CYLINDER SLEEVES
ON THE MICRORELIEF OF THE WORKING SURFACE -U-
AUTHOR-(G4)-SHNEYDER, YU.G., LEBEDINSKIY, G.G., BUNGA, G.A., GUTIN, M.YE.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, AVTOMOBIL'NAYA PROMyshLENNOST', NO 2, 1970, PP 41-42
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--METAL ROLLING, BIBLIOGRAPHY, VIBRATION EFFECT, WEAR
RESISTANCE, METAL MICROSTRUCTURE/(U)M412 ENGINE CYLINDER SLEEVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FKAME--1999/1215 STEP NO--UR/0113/70/000/002/0041/0042
CIRC ACCESSION NO--AP0123179
UNCLASSIFIED